NCEI Marine Data Form Documentation (PDF output)

This is a description of columns (left to right) identified by header at top of form.

TIME: HHMM wit HH equal to hour on 24-hr clock and MM equal to minutes after the hour (e.g 1210 = 12:10pm, 0639 = 6:39am, 1712 = 5:12pm). Note: Date in Year - Month - Day format is given at the top center of each day's data on the form.

LAT: Latitude given in tenths of degrees between -90.0 and 90.0 with values between 0 and 90 in the Northern Hemisphere. Values between -90 and 0 are in the Southern Hemisphere.

LON: Given in tenths of degrees between 0.0 and 360.0 with values between 180 and 360 in the Western Hemisphere. If location is in Eastern hemisphere this value represents a conventional longitude with East (i.e. "E") designation. If the location is in the Western Hemisphere (e.g. Eastern Pacific) it will have a value greater than 180.0. For these, subtract 360.0 from value and multiply by -1 to obtain conventional longitude assigned with a West (i.e. "W") designation. For example:

86.5 = 86.5E longitude
270.5 = -1(270.5 - 360.0)W = -1(-89.5)W = 89.5W

WIND - DIR: Direction from which wind is blowing in degrees (e.g. 360 = north, 180 = south, 90 = east, etc.)

WIND - SPD: Speed of wind given in knots (i.e. nautical miles per hour). Note: Knots = Miles per hour divided by 1.15.

VIS: Horizontal visibility as defined in following table:

90 = less than 1/32 mile (0.05km)
91 = 1/32 mile (0.05km)
92 = ⅛ mile (0.2km)
93 = ⅓ mile (0.5km)
94 = ⅔ mile (1km)
95 = 1 mile (2km)
96 = 2 ½ miles (4km)
97 = 6 miles (10km)
98 = 12 miles (20km)
99 = 31 miles or greater (50km or greater)

WEATHER - PR (present weather):

2-3 digit code for type of weather occuring at the time of observation. Values are defined in the following table:

	Code		
WW = 00-49		*No precipitation at the station at the time of observation*	
WW = 00-19		No precipitation, fog, ice fog (except for 11 and 12), duststorm, sandstorm, drifting or blowing snow at the station[1] at the time of observation or, except for 09 and 17, during the preceding hour	
	Code		
No meteors except photo-meteors [00-03]	00	Cloud development not observed or not observable	[00-03] Characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
	03	Clouds generally forming or developing	
Haze, dust, sand or smoke [04-09]	04	Visibility reduced by smoke, e.g., veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well-developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen; or, in the case of ships, blowing spray at the station	
	08	Well-developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no duststorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches	[11-12] shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 meters on land or 10 meters at sea
	12	More or less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	

	Code		
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant, i.e., estimated to be more than 5 km from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precipitation at the time of observation	
	18	Squalls	[18-19] at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel cloud(s)[2]	
WW = 20-29		Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
	20	Drizzle (not freezing) or snow grains	[20-24] not falling as shower(s)
	21	Rain (not freezing)	
	22	Snow	
	23	Rain and snow or ice pellets	
	24	Freezing drizzle or freezing rain	
	25	Shower(s) of rain	
	26	Shower(s) of snow, or of rain and snow	
	27	Shower(s) of hail[3], or of rain and hail[3]	
	28	Fog or ice fog	
	29	Thunderstorm (with or without precipitation)	
WW = 30-39		Duststorm, sandstorm, drifting or blowing snow	
	30	Slight or moderate duststorm or sandstorm – has decreased during the preceding hour	
	31	Slight or moderate duststorm or sandstorm – no appreciable change during the preceding hour	
	31	Slight or moderate duststorm or sandstorm – has begun or has increased during the preceding hour	
	33	Severe duststorm or sandstorm – has decreased during the preceding hour	
	34	Severe duststorm or sandstorm – no appreciable change during the preceding hour	
	35	Severe duststorm or sandstorm – has begun or has increased during the preceding hour	
	36	Slight or moderate drifting snow	[36-37] generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	[38-39] generally high (above eye level)
	39	Heavy blowing snow	
WW = 40-49		Fog or ice fog at the time of observation	
	40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	41	Fog or ice fog in patches	
	42	Fog or ice fog, sky visible	[42-43] has become thinner during the preceding hour
	43	Fog or ice fog, sky invisible	
	44	Fog or ice fog, sky visible	[44-45] no appreciable change during the preceding hour
	45	Fog or ice fog, sky invisible	
	46	Fog or ice fog, sky visible	[46-47] has begun or has become thicker during the preceding hour
	47	Fog or ice fog, sky invisible	
	48	Fog, depositing rime, sky visible	
	49	Fog, depositing rime, sky invisible	
WW = 50-99		*Precipitation at the station at the time of observation*	
WW = 50-59		Drizzle	
	50	Drizzle, not freezing, intermittent	[50-51] slight at time of observation
	51	Drizzle, not freezing, continuous	
	52	Drizzle, not freezing, intermittent	[52-53] moderate at time of observation
	53	Drizzle, not freezing, continuous	
	54	Drizzle, not freezing, intermittent	[54-55] heavy (dense) at time of observation
	55	Drizzle, not freezing, continuous	

	Code		
	56	Drizzle, freezing, slight	
	57	Drizzle, freezing, moderate or heavy (dense)	
	58	Drizzle and rain, slight	
	59	Drizzle and rain, moderate or heavy	
WW = 60-69		Rain	
	60	Rain, not freezing, intermittent	[60-61] slight at time of observation
	61	Rain, not freezing, continuous	
	62	Rain, not freezing, intermittent	[62-63] moderate at time of observation
	63	Rain, not freezing, continuous	
	64	Rain, not freezing, intermittent	[64-65] heavy (dense) at time of observation
	65	Rain, not freezing, continuous	
	66	Rain, freezing, slight	
	67	Rain, freezing, moderate or heavy	
	68	Rain or drizzle and snow, slight	
	69	Rain or drizzle and snow, moderate or heavy	
WW = 70-79		Solid precipitation not in showers	
	70	Intermittent fall of snowflakes	[70-71] slight at time of observation
	71	Continuous fall of snowflakes	
	72	Intermittent fall of snowflakes	[72-73] moderate at time of observation
	73	Continuous fall of snowflakes	
	74	Intermittent fall of snowflakes	[74-75] heavy (dense) at time of observation
	75	Continuous fall of snowflakes	
	76	Diamond dust (with or without fog)	
	77	Snow grains (with or without fog)	
	78	Isolated star-like snow crystals (with or without fog)	
	79	Ice pellets	
WW = 80-99		Showery precipitation, or precipitation with current or recent thunderstorm	
	80	Rain shower(s), slight	
	81	Rain shower(s), moderate or heavy	
	82	Rain shower(s), violent	
	83	Shower(s) of rain and snow mixed, slight	
	84	Shower(s) of rain and snow mixed, moderate or heavy	
	85	Snow shower(s), slight	
	86	Snow shower(s), slight	
	87	Shower(s) of snow pellets or small hail, with or – without rain or rain and snow mixed	Slight
	88	Shower(s) of snow pellets or small hail, with or – without rain or rain and snow mixed	Heavy
	89	Shower(s) of hail[4], with or without rain or rain and snow mixed, not associated with thunder	Slight
	90	Shower(s) of hail[4], with or without rain or rain and snow mixed, not associated with thunder	Heavy
	91	Slight rain at time of observation	
	92	Moderate or heavy rain at time of observation	
	93	Slight snow, or rain and snow mixed or hail[3] at time of observation	[91-94] Thunderstorm during the preceding hour but not at time of observation
	94	Moderate or heavy snow, or rain and snow mixed or hail[3] at time of observation	
	95	Thunderstorm, slight or moderate, without hail[3], but with rain and/or snow at time of observation	
	96	Thunderstorm, slight or moderate, with hail[3] at time of observation	
	97	Thunderstorm, heavy, without hail[3], but with rain and/or snow at time of observation	[95-99] Thunderstorm at time of observation
	98	Thunderstorm combined with duststorm or sandstorm at time of observation	
	99	Thunderstorm, heavy, with hail[3] at time of observation	

WEATHER - PA (past weather): Values defined in following table:

0 = cloud covering ½ or less of the sky during observation time
1 = cloud covering more than ½ of the sky during some of observation time
but less during remainder of observation time
2 = cloud covering more than ½ of the sky during all of the observation time
3 = sandstorm, dustorm or blowing snow
4 = fog, ice fog or thick haze
5 = drizzle
6 = rain
7 = snow or rain and snow mixed
8 = shower(s)
9 = thunderstorm(s) with or without precipitation

PRESSURE - SLP: Sea level atmospheric pressure given in hundredths of inches of mercury

PRESSURE - 3HR: Change in pressure during previous 3 hours in inches of mercury. If pressure is less than it was 3 hours previously, value will be prefixed with a minus 9"-") sign.

PRESSURE - CC: Pressure tendency during previous 3 hours as defined below:

0 = Increasing, then decreasing (now the same or higher than 3 hours ago)
1 = Increasing then steady or increasing then increasing more slowly (now higher)
2 = Increasing steadily or unsteadily (now higher)
3 = Decreasing or steady, then increasing (now higher)
4 = Steady (same as 3 hours ago)
5 = Decreasing then increasing (now same or lower than 3 hours ago)
6 = Decreasing, then steady or decreasing then decreasing more slowly (now lower)
7 = Decreasing steadily or unsteadily (now lower)
8 = Steady or increasing, then decreasing or decreasing then decreasing more rapidly (now lower)

TEMPERATURE - DB: Air temperature in tenths of degrees Fahrenheit

TEMPERATURE - WB: Wet-bulb temperature in tenths of degrees Fahrenheit

TEMPERATURE - DP: Dew point temperature in tenths of degrees Fahrenheit

TEMPERATURE - SS: Sea surface temperature in tenths of degrees Fahrenheit

CLOUDS - TOT: Coverage of all clouds in the complete sky in oktas (eighths). 9 indicates an obscuration by fog or other meteorological phenomena

CLOUDS - LOW: Coverage of low clouds in the complete sky in oktas (eighths). Low clouds are Cumulus, cumulonimbus, stratus, stratocumulous and nimbostratus. If no low clouds are reported, the amount of mid clouds are entered here (altostratus, altocumulous, nimbo-stratus).

CLOUDS - HGT: Height of the base of the lowest cloud above the surface coded as shown in the table below:

0 = 0 to 164 feet (50 meters)
1 = 165 to 328 feet (100 meters)
2 = 329 to 656 feet (200 meters)
3 = 656 to 984 feet (300 meters)
4 = 985 to 1969 feet (600 meters)
5 = 1970 to 3281 feet (1000 meters)
6 = 3282 to 4921 feet (1500 meters)
7 = 4922 to 6562 feet (2000 meters)
8 = 6563 to 8202 feet (2500 meters)
9 = 8203 feet or higher or no clouds
A= height of cloud bases unknown/lower than station

CLOUDS - HIGH: Type of high cloud predominating the sky (Cirrus, Cirrostratus, Cirrocumulus). Coded as follows:

0 = no high clouds
1 = Cirrus, not progressively invading sky
2 = Dense Cirrus
3 = Dense Cirrus patches or remains of Cumulonimbus anvil
4 = Dense Cirrus hooks progressively invading the sky
5 = Cirrus w/Cirrostratus or Cirrostratus alone, progressively invading the sky and less than 45 degrees above the horizon
6 = Cirrus w/Cirrostratus or Cirrostratus alone, progressively invading the sky and more than 45 degrees above the horizon
7 = Cirrostratus veil covering entire sky
8 = Cirrostratus not progressively invading the sky and not covering entire sky
9 = Cirrocumulus (alone or with Cirrus but Cirrocumulus is predominate. Not covering Entire sky.
A = High clouds not visible due to darkness, lower clouds, obscuration, etc.

CLOUDS - MID: Type of middle cloud predominating the sky (Nimbostratus, Altostratus, Altocumulus). Coded as

follows:

0 = no middle clouds
1 = Altostratus or Nimbostratus (semi-transparent)
2 = Dense Altostratus or Nimbostratus
3 = Altocumulus, mostly or completely semi-transparent
4 = Altocumulus patches at one or more levels
5 = Altocumulus, semi-transparent in bands, progressively invading the sky
6 = Altocumulus resulting from spreading out of Cumulus or Cumulonimbus
7 = Altocumulus, opaque in one or more layers, not progressively invading the sky
8 = Altocumulus with towers or cumuliform tufts
9 = Altocumulus in a chaotic sky (at several levels)
A = Middle clouds not visible due to darkness, low clouds, obscuration, etc.

CLOUDS - LOW: Type of low cloud predominating the sky (Stratus, Cumulus, Stratocumulus or Cumulonimbus). Coded as follows:

0 = no low clouds
1 = Cumulus (little vertical extent, fair weather)
2 = Cumuluis (moderate or strong vertical extent, sometimes towering or with Stratocumulus and other Cumulus at the same level
3 = Cumulonimbus (without anvil, often present with Cumulus, Stratocumulus and Stratus)
4 = Stratocumulus formed by spreading out of Cumulus (Cumulus often present too)
5 = AStratocumulus not formed by spreading out of Cumulus
6 = Stratus (continuous sheet or layered ragged shreds)
7 = Stratus Fractus of bad weather (usually below Nimbostratus or Altostratus)
8 = Cumulus and Stratocumulus not formed from the spreading out of Cumulus at different levels
9 = Cumulonimbus (with anvil)
A = Low clouds not visible due to darkness, obscuration, etc.

WAVE - DIR: Direction from which waves come in tens of degrees (e.g. 36 = North, 09 = East, 18 = South, etc.)

37 = waves confused, direction indeterminate with wave heights less than or equal to 16 ft.
38 = waves confused, direction indeterminate with wave heights greater than or equal to 16 ft.

WAVE - PER: Period of wind waves in seconds

WAVE - HGT: Height of waves in feet.

SWELL - DIR: Direction from which swells come in tens of degrees (e.g. 36 = North, 09 = East, 18 = South, etc.)

37 = swells confused, direction indeterminate with swell heights less than or equal to 16 ft.
38 = swells confused, direction indeterminate with swell heights greater than or equal to 16 ft.

SWELL - PER: Period of swells in seconds

SWELL - HGT: Height of swells in feet.

SHIP - DIR: True direction of resultant displacement of ship during previous 3 hours. Coded as follows:

0 = stationary
1 = Northeast
2 = East
3 = Southeast
4 = South
5 = Southwest
6 = West
7 = Northwest
8 = North
9 = unknown

SHIP - SPD: Ship average speed during preceding 3 hours from observation time.

0 = 0 knots
1 = 1-5 knots
2 = 6 - 10 knots
3 = 11 - 15 knots
4 = 16 - 20 knots
5 = 21 - 25 knots
6 = 26 - 30 knots
7 = 31 - 35 knots
8 = 36 - 40 knots
9 = over 40 knots

Note: 1 knot = 1.15 miles per hour.

ICE - ACC: Ice accretion on ship. Left blank if not reported Defined as follows:

1 = Icing from ocean spray
2 = Icing from fog
3 = Icing from spray and fog
4 = Icing from rain
5 = Icing from spray and rain

ICE - THK: Thickness of ice on ship or buoy in centimeters.

ICE - RATE: Rate of ice accretion on ship. Left blank if unreported. Defined as follows:

0 = Ice not building up
1 = Ice building up slowly
2 = Ice building up rapidly
3 = Ice melting or breaking up slowly
4 = Ice melting or breaking up rapidly